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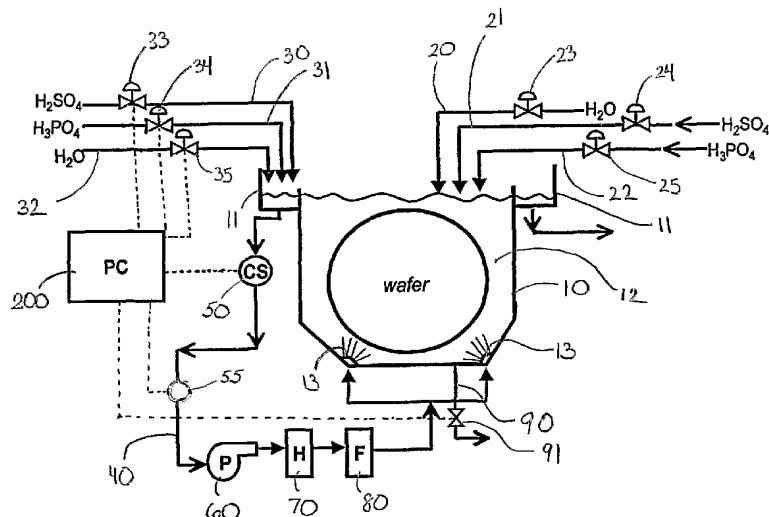
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(54) Title: SYSTEM AND METHOD FOR SELECTIVE ETCHING OF SILICON NITRIDE DURING SUBSTRATE PROCESS-  
ING



(57) Abstract: A system (fig.5) and methods for selectively etching silicon nitride in the presence of silicon oxide that provide high selectivity while stabilizing silicon oxide etch rates. The invention comprises a processing chamber (10), dispense lines (20, 21, 22), feed lines (30, 31, 32), a recirculation line (40), a process controller (200), a concentration sensor (50), a particle counter (55), and a bleed line (90). The invention dynamically controls the concentration ratio of the components of the etchant being used and/or dynamically controls the particle count within the etchant during the processing of the at least one substrate. As a result etchant bath life is increased and etching process parameters are more tightly controlled.

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